CLAIMS:

1. A spin excitation method for exciting spins within an object to be imaged by a pulse sequence containing RF pulses, said method comprising the steps of:

predicting a specific absorption ratio (SAR) of the object to be imaged in executing said pulse sequence; and

adjusting at least one among the number of pulses, pulse waveform and pulse width of said radio frequency (RF) pulses in said pulse sequence so that said predicted SAR value falls within a predetermined limit.

2. The spin excitation method as defined in claim 1, wherein said RF pulses to be adjusted are 180° pulses.

3. The spin excitation method as defined in claim 1, wherein the adjustment of the pulse waveform of said RF pulses is modification from a Shinnar-Le Roux (SLR) pulse waveform to a sinc pulse waveform.

4. The spin excitation method as defined in claim 1, wherein the adjustment of the pulse waveform of said RF pulses is modification from an SLR pulse waveform to a waveform obtained by filtering said SLR pulse waveform.

5. The spin excitation method as defined in claim 1, wherein said filtering employs a Hamming filter.

6. A spin excitation apparatus for exciting spins within an object to be imaged by a pulse sequence containing RF pulses, said apparatus comprising:

SAR prediction means for predicting an SAR of the object to be imaged in executing said pulse sequence; and

RF pulse adjusting means for adjusting at least one among the number of pulses, pulse waveform and pulse width of said RF pulses in said pulse sequence so that said predicted SAR value falls within a predetermined limit.

7. The spin excitation apparatus as defined in claim 6, wherein said RF pulses to be adjusted are 180° pulses.

8. The spin excitation apparatus as defined in claim 6, wherein the adjustment of the pulse waveform of said RF pulses is modification from an SLR pulse waveform to a sinc pulse waveform.

9. The spin excitation apparatus as defined in claim 6, wherein the adjustment of the pulse waveform of said RF pulses is modification from an SLR pulse waveform to a waveform obtained by filtering said SLR pulse waveform.

10. The spin excitation apparatus as defined in claim 6, wherein said filtering employs a Hamming filter.

11. A magnetic resonance imaging apparatus having:

static magnetic field generating means for generating a static magnetic field in a space containing an object to be imaged;

gradient magnetic field generating means for generating a gradient magnetic field in said space;

transmit means for transmitting an RF excitation signal to said space;

receive means for receiving a magnetic resonance signal from said space; and

image producing means for producing an image based on said received magnetic resonance signal,

wherein the spin excitation apparatus as defined in claim 6 is employed as said transmit means.

12. The magnetic resonance imaging apparatus as defined in claim 11, wherein said RF pulses to be adjusted are 180° pulses.

13. The magnetic resonance imaging apparatus as defined in claim 11, wherein the adjustment of the pulse waveform of said RF pulses is modification from an SLR pulse waveform to a sinc pulse waveform.

14. The magnetic resonance imaging apparatus as defined in claim 11, wherein the adjustment of the pulse waveform of said RF pulses is modification from an SLR pulse waveform to a waveform obtained by filtering said SLR pulse waveform.

15. The magnetic resonance imaging apparatus as defined in

claim 11, wherein said filtering employs a Hamming filter.

16. A magnetic resonance imaging method comprising the steps of generating a static magnetic field in a space containing an object to be imaged, generating a gradient magnetic field in said space, transmitting an RF excitation signal to said space, receiving a magnetic resonance signal from said space, and producing an image based on said received magnetic resonance signal, wherein said transmission is performed by the spin excitation method as defined in claim 1.

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